BOICHEV,B.;prof.; IKONOMOV,Il.; MATEV,Iv.; MILEV,Tr.; PANEVA-KHOLEVICH,E.; KHOLEVICH,Ia.

Surgery of hand injuries. Khirurgiia,Sofia 13 no.2-3:215-232 '60.
(HAND wds & inj.)

MILEV, Trifon Iv. (Sofiya)

Electrotraumatism; according to materials of the Pirogov Institute of First Aid for 1952-1956. Vop. Elektropat., Elektrotravm. i Elektrobezop. 3:51-59 '62. (MIRA 16:12)

MILEV, T.I.

Trauma of the face and extremities requiring emergency plastic surgery. Acta chir. plast. 4 no.3:227-239 '62.

1. Pirogoff Institute for Surgical Emergencies, Sofia (Bulgaria) Director: Dr. Kh. Zdravkov.

(SURGERY, PLASTIC) (FACIAL INJURIES)
(FOOT) (HAND INJURIES)

[redacted]

MILEV, T. K.

Achieving 501.30 Meters Unidirectional High-speed Driving in Mine Galleries (Drifts). Minno Delo (Mining), #2:46:Feb 55

MILEV, T. K.

Better arched walls for supporting the pits in coal mines.
p. 24.

Vol. 10, No. 4,
July/August, 1955.
MINNO DELO
Sofiya, Bulgaria.

SOURCE: East European Accessions List,(EEAL) Library of Congress, Vol. 5, No. 1, January, 1956.

K.

MILEV, Tr., inzh.; SEMKOV, N., inzh.

Prospective extraction and dressing of nonferrous ores in 1961-1980. Min delo 17 no.11:17-22 '62.

1. "Kiproruda". Chlenove na Redaktsionnata kolegiia, "Minno delo i metalurgiia."

MILEV, V.; BOGDANOV, I.; GEORGIEV, A.

"On the economic value of lead-zinc deposits."

MINNO DELO, Sofiia, Bulgaria, Vol. 14, no. 2, Mar./Apr. 1959.

Monthly list of East Europe Accessions (EEAI),LC, Vol. 8, No. 6, ~~Jun~~ Sep 59, Unclas

MILEV, V.

Some notes on the article by B. Viranov and V. Kurkov. Min delo 18 no.5:46-48 My '63.

1. Upravlenie "TSvetna metalurgiia i rudodobiv."

[redacted]

SHIPKOVENSKI, N., professor; GEORGIEV, Iv.; MILEV, V.

Reflex epilepsy in right cubital osteoarthritis tuberculosa.
Suvrem.med., Sofia no.6:97-100 '55.

1. Iz Nervnata i psikhiatrichnata klinika pri Visshiia meditsinski institut V.Chervenkov-Sofiia (direktor: prof. G. Uzunov)

(TUBERCULOSIS, OSTEOARTICULAR,
cubital, with reflex epilepsy)
(EPILEPSY,
in tuberculosis, cubital)

MILEV, V.

Certain rules related to the appearance of verbal and auditory hallucinations and their pathophysiology. Suvrem. med., Sofia 9 no.2: 34-42 Feb 58.

1. Iz Psikho-nevrologichnata bolnitsa; Kurilo (Gl. lekar: St. Popov)
(HALLUCINATIONS
auditory & verbal, pathophysiol. (Bul))

MILEV, V.

Clinicoexperimental method of investigating hallucinations. Zhur. nevr. i psikh 58 no.12:1465-1469 '58. (12:1)

1. Psikhonevrologicheskaya bol'nitsa (Glavnyy vrach St. Popov), Sofiya.

(HALLUCINATIONS,
clin. & exper. investigations (Rus))

MILEV, V.

On the problem of psychogenic reactions in mental disorders.
Suvrem.med.,Sofia no.12:32-39 '59.

1. Iz psikho-nevrologichnata bolnitsa - Kurilo - Sofiia.
(MENTAL DISORDERS)
(HYSTERIA)

MILEV, Vel'o

Leveling of rice fields in Bulgaria. Selskostop nauka 1 no.10:1063-1067 '62.

1. Nauchnoizsledovatelski institut po zelenchukovi kulturi "Maritsa" v Plovdiv.

MILEV, Vel'o

Timing of rice harvesting, and its influence on grain properties. Selskostop nauka 1 no.6:615-622 '62.

1. Tsentralen nauchnoizsledovatelski institut po zelenchukovi kulturi "Maritsa" v Plovdiv.

MILEVA, B.

16 JUL 1962

(14) 210

Sofia, Sredno Meditsinsko Rabotnik, No 1, 1962

1. "Ideological and Political Training in Instruction in the Medical Disciplines in Medical Schools," Docent V. CHOLAKOV of the ISUL (not identified); pp 9-14.

2. "Technical Progress and the Tasks Facing Public Health Workers," Dr L. PAMPULOV, Senior Physician of the Ministry of Public Health and Social Welfare (MNZSG-Ministerstvo na narodnoto zdrave i sotsialnite grizhi); pp 14-18.

3. "The Anthelmintic Effect of Piperazine Preparations," T. St. TODOROV, Junior Scientific Collaborator (Mladshi nauchni sutrudnik), NIEM (not identified); pp 19-23.

4. "Treatment by Means of Inhalation with Aerosol Apparatus," Dr V. NINOV, Section Chief (Zaveshdashch otdelenie), and I. KOYKOV, Medical Technician (Meditsinski tekhnik), both of the Balneophysical Therapy Polyclinic (Balneofiziloterapevtichnata poliklinika), Sofia; pp 23-28.

5. "On-the-Job Exercises for Health Workers," [illegible], Scientific Collaborator at the clinic (Klin.-klinika) in G. [Gorna] Banya; pp 28-34.

6. "Preserving the Usefulness of 'Hard' and 'Soft' Inventories in Hospitals and Related Institutions," P. [illegible]VA, Senior Nurse (Starsha meditsinska sestra), Fourth City Hospital (Gradska bolnitsa), Sofia; pp 35-40.

7. "Centralized Sterilization in Hospitals and Related Institutions," Iv. ZARACHILEV, Junior Scientific Collaborator, NIEM (not identified); pp 40-43.

8. "The Storage and Use of Medicines in Children's Educational Institutions," A. [illegible]VA, Pharmacy Manager (zaveshdashch apteka), and B. MILEVA, Nurse, NIIP (not identified); pp 43-45.

9. "Concern for Improving Qualifications among Intermediate Medical Workers in Czechoslovakia," Dr Iv. DINEV, Senior Physician, Ministry of Public Health and Social Welfare, and Tsv. [illegible]OVA, Senior Nurse, Higher Medical Institute (VMI-Visshi meditsinski institut), Sofia; pp 46-48.

MILEVA, G.; OBRETENOV, N.; POPOV, M.

Silver minerals from the Chiprovtsi deposits, Mikhaylovgrad District. Spis Bulg geol druzh 25 no.3:289-294 '64.

1. "NIPRORUDA" Institute. Submitted February 6, 1964.

MILEVIC, Svetozar, inz. (Beograd)

Measuring low frequencies. Tesla no.13/14:9-14 S-O '55.

MILEVIC, Svetozar, inz. (Beograd)

Synchronization of multivibrators. Tesla no.17/18:18-19 '56.

YUGOSLAVIA/Electricity - General Problems. G

Abs Jour : Ref Zhur Fizika, No 12, 1959, 27647

Author : Milevic Svetozar

Inst :

Title : Measurement of Certain Physical Quantities from a Changing Capacitance

Orig Pub : Elektrotehn. fak. Univ. Beogradu. Mat. i fiz., 1958, No 21, 27, 7 s, il.

Abstract : Certain methods are described for the measurement of small displacements based on the change in the capacitance of a capacitor. In the first method the value of the capacitance is measured with a bridge. In the second method the measured capacitance is a part of a tank circuit. Thus, a change in the magnitude of the capacitance causes a change in the tank-circuit frequency. This change in frequency can be measured by means of a discriminator, heterodyne,

Card 1/2

YUGOSLAVIA/Electricity - General Problems. G

Abs Jour : Ref Zhur Fizika, No 12, 1959, 27647

or a special generator. The latter method has an exceedingly high sensitivity. With this method it is possible to measure displacements less than 10^{-5} cm.

In conclusion, the application of this method is described for the measurement of other quantities such as temperature, pressure, etc.

Card 2/2

MILEVIC, Svetozar, inz.

Dynamometer for direct reading of the casting and conveying forces of built-in switches. Zaleznice Jug 19 no.6:1-6 Je '63.

MILEVIC, Svetozar, dipl. inz.

Optical and physical properties of stained glass for railroad light signals. Zeleznice Jug 20 no.3:12-15 Mr '64.

MILEVICH, A.

(2)

Manufacture of candied cheese curds. A. Milevich (Milk Plant No. 3, Leningrad). *Molochnaya Prom.* 15, No. 4, 40–1(1954).—Manuf. of candied cheese curds from pot-cheese, with fat 23.1 and moisture 56%, sugar, sweet-cream butter, chocolate, cocoa butter, and vanillin is described. Diagrams of the steps taken in manufg. are presented. Vladimir N. Krukovsky

MILEVICH, M., agronom

Returns have been hundredfold. Nauka i pered.op.v sel'khoz. 9 no.11:16-17 N '59. (MIRA 13:3)

1. Kolkhoz "Peremoga," Tolochinskogo rayona, Vitebskoy oblasti.
(Tolochin District--Pastures and meadows)

MILEVOV, V.

Rendering an account of cooperative production. p.27.
(Kooperativno Zemedelie Vol. 10, no. 8, Aug. 1955, Sofiya)

SO: Monthly List of East European Accessions, (EEAL). LC, Vol. 4, No. 11, Nov. 1955, Uncl.

AFANAS'YEVA, Ye.V.; MILEVSKAYA, I.N.; ISAYEV, D.N.

Systematized formation of delirium in adolescents. Zhur.nevr.i psikh. 62 no.7:1038-1043 '62. (MIRA 15:9)

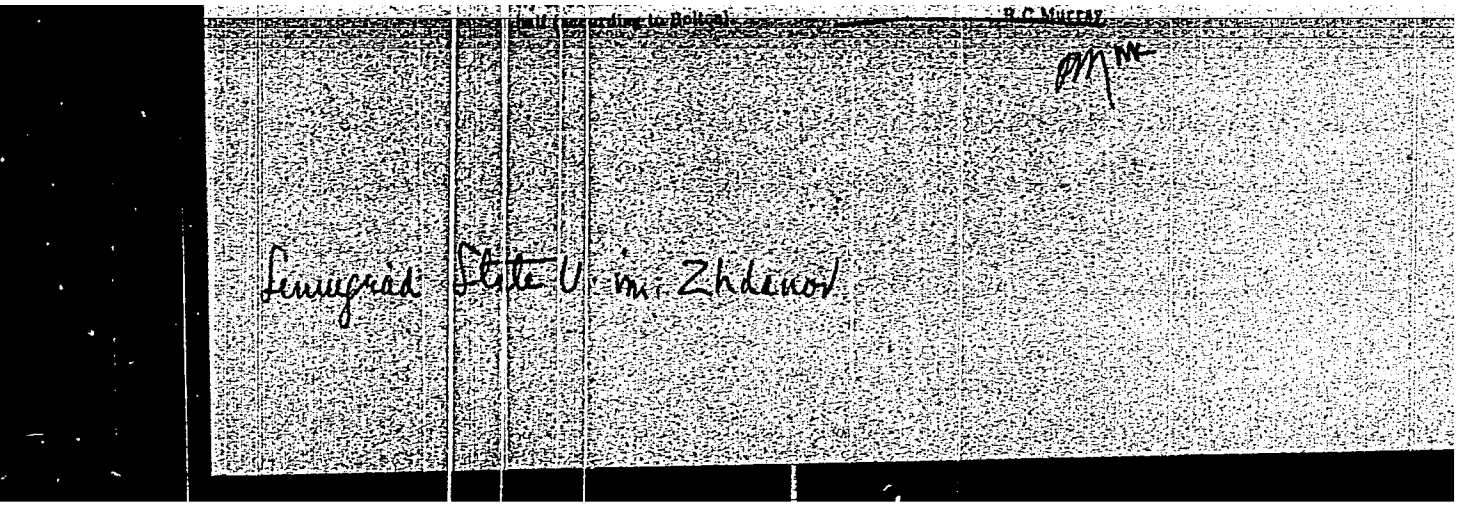
1. Kafedra psikhiatrii (zav. - prof. S.S.Mnukhin) Leningradskogo pediatricheskogo meditsinskogo instituta.
(DELIRIUM) (PERSONALITY, DISORDERS OF)

MILEVSKAYA, I.S.

539.132

2482. CALCULATION OF π-ELECTRONIC POLARIZABILITY OF POLYENES AND BENZENE USING A "METALLIC" MOLECULAR MODEL. M.N.Adamov and I.S.Milevskaya. Dokl. Akad. Nauk SSSR, Vol. 109, No. 1, 87-90 (1956). In Russian.

The results of calculations based on the simplest form of the "metallic" model, which assumes that in the absence of an external field the electrons are free to move along certain lines and that outside these lines their potential energy becomes infinite, are compared with those published by Bolton (Abstr. 3943/1915). It is found



MILEVSKAYA, I. S.

AUTHORS: Adamov, M. N. and Milevskaya, I. S. 51-3-22/24

TITLE: Dispersion formula in a metal model of a molecule with conjugated bonds. (Dispersionnaya formula v metallicheskoy modeli molekuly s sopryazhennymi svyazyami).

PERIODICAL: "Optika i Spektroskopiya" (Optics and Spectroscopy), 1957, Vol.2, No.3, pp. 399-401 (U.S.S.R.)

ABSTRACT: This paper presents quantum-mechanical calculations for π-electron optical polarizability for $C_{2m}H_{2m+2}$ polyenes and benzene. The metallic model is used. It is assumed tha the many-electron wave-functions can be approximated by an antisymmetrized linear combination of products of orthogonal single-electron wave-functions. Polyene molecules are represented by broken lines lying in one plane whose segment are at 30° with the polyene axis. Each segment is taken to be equal to a (a is the length of the C-C bond, which is 2.6 and end segments are equal to 1.5 a. The electrons are take to move in a rectangular potential box with infinitely high walls. The calculated longitudinal (along the polyene axis) π-electron polarizability for the ground state agrees well with the experimental values for C_4H_6, C_6H_8 and C_8H_{10} for the frequency of the D-line of sodium. For $C_{10}H_{12}$ the

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Dispersion formula in a metal model of a molecule with conjugated bonds. (Cont.)

51-3-22/24

calculated value is 10 times too large because the frequency of the D-line of sodium is close to the natural frequency of an allowed $C_{10}H_{12}$ electronic transition. The benzene molecule is represented by a circle of radius $R = 3a/\pi$, where again a = the length of the C-C bond. The results for the polarizability at the D-line of sodium agree well with the experimental values.
There are 2 tables and 4 references, 3 of which are Slavic.

SUBMITTED: October 12, 1956.

ASSOCIATION: Physics Department, Leningrad State University. (Fizicheskiy Fakul'tet Leningradskogo Gosudarstvennogo Universiteta).

AVAILABLE:

Card 2/2

KHACHKURUZOV, G.A.; MILEVSKAYA, I.S. (Leningrad)

Calculation of thermodynamic functions for polyatomic gases with nonrigid molecules. Part 1: General theory. Zhur. fiz. khim. 34 no. 11:2554-2560 N '60. (MIRA 14:1)

1. Gosudarstvennyy institut prikladnoy khimii.
(Thermodynamics) (Gases)

MILEVSKAYA, I.S.; VOL'KENSHTEYN, M.V.

Determination of macroradical conformations from spectra of electron paramagnetic resonance (EPR). Opt. i spektr. 11 no.3:349-352 S '61. (MIRA 14:9)
(Paramagnetic resonance and relaxation)
(Radicals (Chemistry))

KHACHKURUZOV, G.A.; MILEVSKAYA, I.S.

Calculation of the thermodynamic functions of polyatomic gases with nonrigid molecules. Part 2: Nonlinear symmetrical molecules XY_2. Zhur. fiz. khim. 35 no.1:142-151 Ja '61. (MIRA 14:2)

1. Gosudarstvennyy institut prikladnoy khimii, Leningrad.
(Thermodynamics) (Molecules)

5,4600

36195

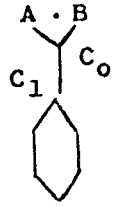
S/051/62/012/003/004/016
E202/E192

AUTHORS: Milevskaya, I.S., and Vol'kenshteyn, M.V.

TITLE: E.p.r. spectra of polystyrene radicals

PERIODICAL: Optika i spektroskopiya, v.12, no.3, 1962, 381-386

TEXT: Detailed quantum mechanics calculations of the spin density distribution of radicals formed during mechanical destruction and irradiation of polystyrene are given. Three types of radicals are discussed, as shown below. Types I and II were further subdivided and studied according to whether the A and B atoms are coplanar with the phenyl ring while the π-electrons of the ring and the unpaired electron form a single system, or whether the plane of the ring is turned by 90° about the C_oC_1 axis, viz:



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E.p.r. spectra of polystyrene ... S/051/62/012/003/004/016
E202/E192

Experimental evidence was given suggesting also the presence of type III, to which a special attention was given. In the calculation of its spin density only σ-electrons of the phenyl ring were considered, taking altogether seven valency structures. The spin density (calculated from the wave function) gave at the hydrogen atoms closest to the unpaired electron $\varrho_H = -0.096$, which corresponded to the splitting on these protons of $Q = 49$ gauss, as previously given by the present authors (Ref.1: Opt. i spektr. v.11, 349, 1961) and was also in good agreement with the experimental data. It was concluded that the discrepancies in the experimental results quoted by various authors could be attributed to their observing different types of radicals. Finally, using the hyperfine structure and splitting data of their previous paper (Ref.1) the authors evaluated the conformation of one of the radicals.

SUBMITTED: March 22, 1961

Card 3/3

S/194/62/000/007/077/160
D295/D308

AUTHORS: Kosolapova, E.F., and Milevskaya, N.G.

TITLE: The coefficient of linear expansion of certain materials for semiconductor thermo-elements

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 7, 1962, abstract 7-4-69 shch (In collection: Teploenergetika, no. 3, M., AN SSSR, 1961, 58-60)

TEXT: The authors have investigated the coefficient of linear expansion of alloys prepared by high-temperature sintering and by melting in quartz vessels in vacuum up to 0.06 mm Hg. Bi_2Te_3 - Sb_2Te_3, PbTe, Bi_2Te_3, $CoSb_3$, ZnSb and the commutation alloy Ni-Bi were prepared by hot pressing. The pressure during preparation was 170 kg/cm^2, temperature 350°C, pressure being maintained for 3 min. The coefficient of linear expansion was investigated up to 400°C. Measurements were made by means of a quartz dilatometer. The sample placed in a quartz vessel, was pressed against its bottom by a quartz rod. The sample temperature was measured by a chromel alumel

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The coefficient of linear expansion ...

thermocouple. The length increase of the samples was plotted as a function of temperature. Some alloys (PbTe, Bi_2Te_3 and Bi_2Te_3 - Sb_2Te_3) were also prepared by melting powders in a quartz vessel at 6 x 10-2 mm Hg. Samples of ~16 mm length were prepared from the ingots obtained. The PbTe alloy has the largest coefficient of linear expansion. For its thermoelectric properties PbTe is the best negative branch. Its coefficient of linear expansion is however large in comparison with a Bi_2Te_3 - Sb_2Te_3 positive branch. The temperature of the hot junction for the pressed couple Bi_2Te_3 - Sb_2Te_3 - Bi_2Te_3 must be $< 370^oC$ and for the cast alloy $< 400^oC$. The $CoSb_3$ - - ZnSb couple can work with a corresponding commutation alloy up to nearly 400°C. Temperature dependence of the coefficient of linear expansion are given and recommendations are given on the use of alloys in thermoelements. 3 references. [Abstracter's note: Complete translation.]

Card 2/2

MILEVSKAYA, V. G.

AUTHORS: Panin, V. Ye. and Milevskaya, V. G. 126-1-18/40

TITLE: On the problem of the latent deformation energy of alloys of solid solutions. (K voprosu o skrytoy energii deformatsii splavov tverdykh rastvorov).

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol.5, No.1, pp. 120-126 (USSR)

ABSTRACT: Fedorov, A. A. has shown (Ref.1) that for pure metals with an equal crystal structure a certain relation exists between the melting temperature and the magnitude of the latent deformation energy; the latter will be the higher the higher the melting temperature of the material. This phenomenon is attributed to the fact that with increasing melting point temperature the intensity of relaxation decreases during deformation, which leads to an additional accumulation of deformational lattice distortions. The picture is much more complicated for alloys than it is for pure metals; in this paper only those alloys are dealt with which represent solid solutions. As a result of the presence in the lattice of the solvent metal of atoms of the other component, the lattice of the alloy is strongly distorted even in the annealed state and the sliding conditions in it become more complicated. Therefore, the magnitude of the latent deformation energy

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On the problem of the latent deformation energy of alloys of solid solutions.

as well as the resistance to deformation should be larger than in the pure solvent even if the latter has a higher melting point. This idea was first expressed by M. A. Bol'shanina (Ref.2) and was partly verified by N. V. Tyzhnova (Ref.3). Tyzhnova investigated Cu-Ni alloys containing 10, 30, 50 and 70% Ni and also pure copper. The deformation was effected by compression. Some of her results are graphed in Fig.1 of this paper. As was to be anticipated, the absorbed energy in the alloys is considerably higher than in pure copper. Thereby, the magnitude of the latent energy increases monotonously with increasing nickel content. The authors of this paper believe that the latent energy cannot increase monotonously with increasing nickel content and that this should apply only for nickel contents up to 50% when the lattice of the alloy has a minimum distortion. Further increase of the nickel content reduces the content of copper atoms in the nickel and this should lead to a decrease in the degree of deformation of the lattice of the solvent metal and thus also to a decrease of the latent deformation energy. Therefore, when changing the

On the problem of the latent deformation energy of alloys of solid solutions.

concentration of the Cu-Ni alloy the latent deformation energy should change along a curve, the maximum of which is in the medium range of concentrations. Tyzhnova did not obtain such a curve because in the second half of the system she only investigated the single alloy containing 70% Ni. Also she did not investigate pure nickel and comparison of the results obtained for pure copper with those obtained for Cu-Ni alloys is not quite appropriat owing to the lower melting point of the copper. For verifying the here expressed views, the authors investigated pure nickel and pure copper and also alloys containing 40, 60 and 80% Ni, the exact analyses of which are given in a table, p.122. Furthermore, they investigated a copper-zinc alloy containing 61.20% Cu, 38.61% Sn without any Pb and Mn contents; this alloy was chosen because its melting point is lower than that of copper. The magnitude of the latent energy was determine as the difference between the plastic deformation work and the heat generated during the deformation, a method described by various authors (Refs.1-3). The scattering of the values of the absorbed energy amounts to 1-2%; owing to the nonuniform distribution of the temperature

On the problem of the latent deformation energy of alloys of solid solutions.

at the contacting surfaces, there was a systematic error as a result of which the energy values were 10 to 12% too high. Since this error applies to all the results, it is of no consequence from the point of view of studying relative relations. The results are graphed in Figs.2-6 and it can be clearly seen that the individual curves have fairly pronounced maxima. The following conclusion are arrived at. The latent deformation energy of solid solutions with unlimited solubility of the system Cu-Ni changes with the composition of the alloy in accordance with a curve with a maximum which passes through the medium range of concentrations. This corresponds with changes in the hardness, the electric resistance, the dynamic coefficient, the thermo e.m.f. and other characteristics which depend on the composition. On changing over from pure copper to brass Л62, which is an α-solid solution of limited solubility, the latent deformation energy increases. The increase of the absorbed energy with increasing deformation is considerably larger for brass than it is for alloys of copper with nickel. A correspondence between the flow curves

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Card 5/5

MILEVSKAYA, Yu. L.

USSR/Medicine - Tubercular Peritonitis Jan 47
Medicine - Streptomycin

"A Case of Delayed Tubercular Peritonitis Cured by Streptomycin," Yu. L. Milevskaya, Therapeutic Clinic, Cen Inst for Advancement of Doctors; Cen Clinic, Cen Inst for Advancement of Doctors, Cen Clinical Hosp Inani Semashko, Min of Transp, 2 pp

"Klin Med" Vol XXVII, No 1

From 1 Jul 47, one million units of streptomycin were injected each day. Two months later, after massages and therapeutic gymnastics, patient recovered sufficiently to walk. She was discharged 5 Sep 47. In Mar 48, she was recalled and an additional 7 million units administered

USSR/Medicine - Tubercular Peritonitis (Contd) Jan 49

a prophylactic measure. One year after the operation, on 30 Jun 48, recovery seemed complete.

Min of Transp: A. A. Sergeyev, Gen-Dir of Adm Sv, III Rank.

MILEVSKAYA, Yu.L.

Rational therapy of lobar pneumonia. Klin.med.,Moskva 29 no.4: 30-33 Apr 1951. (CLML 20:9)

1. Of the Therapeutic Clinic (Head--Honored Worker in Science Prof. I.A. Kassirskiy), Central Institute for the Advanced Training of Physicians, attached to the Central Clinical Hospital imeni Semashko of the Ministry of Ways of Communication (Director G.A. Zhdanov).

MILEVSKAYA, Yu. L.

USSR/Medicine - Chemotherapy, Combination Jan 53

"Combination Treatment With Antibiotics," Prof. I. A. Kassirskiy, I. I. Poroshina, and Yu. L. Milevskaya (Moscow), Therapeutic Clinic, Central Institute for Advanced Training of Physicians

Klin Med, No 1, Vol 31, pp 14-25

Experimental and clinical data confirm the suitability of combination treatment of infectious or septic diseases with antibiotics. Two or more chemotherapeutic agents, each acting differently on the microorganisms, produce both the bacteriostatic and the bactericidal action; this action is more rapid and lasting than that due to the effects of one of these chemical prepns alone.

PA 255T23

Milevskaya, Yu. L.

Vitamin B_{12} blood level in pernicious anemia. Yu. L. Milevskaya. *Klin. Med.* 33, No. 12, 53-8(1955).—The vitamin B_{12} (I) blood level in pernicious anemia during the acute stage was less than 0.008 mγ/cc. Following a single admin'stration of I the blood level rose to 0.2-1.8 mγ/ml. during the first 3-6 hours and dropped during the following 12-24 hours to normal. The assay was carried out with *Escherichia coli* as the test organism, which was grown in nutrient medium contg. a special mixture of salts, glucose, and KCN. Blood was deproteinized with an acetate buffer—pH 4-6—which at the same time liberated the protein-bound I after the serum was diluted with distd. water and boiled for 30 minutes. Protein-bound I is not active microbiologically. In iron-deficiency anemias a low level of I prevents the proper assimilation of ingested iron. Administration of I proves beneficial. Frequent determination of I in pernicious anemia treatment make it possible to maintain the vitamin level at its maximum which is the one found during remission stage.

A. S. Mikhin

Therapeutic clinic, Cent. Clinical Hospital im Semashko, M
& Therapeutic Clinic, Cent. Inst. Advanced Train
of Physicians

MILEVSKAYA, Yu. L., Cand Med Sci -- (diss) "Treatment of patients with pernicious anemia with Vitamin B_{12}." Mos, 1957. 16 pp (Min of Health USSR, Central Inst for the Advanced Training of Physicians), 200 copies (KL, 2-58, 116)

USSR/Pharmacology. Toxicology. Vitamins. V

Abs Jour: Ref. Zhur. - Biol., No 22, 1958, 102879

Author : Milevskaya, Yu. L.

Inst : -

Title : On the Expediency of Application of Large Doses of Vitamin B_{12}.

Orig Pub: Klinich. meditsina, 1958, 36, No. 3, 93-97.

Abstract: On the basis of 3-year-long observations of a group of patients (38) with pernicious anemia, the conclusion is made that a good therapeutic effect in uncomplicated pernicious anemia is induced by the introduction of moderate doses of vitamin B_{12} (15-40 gamma) daily or every 1-2 days. The introduction of large doses of B_{12} (over 200 gamma) is not expedient, since in such

Card 1/2

MILEVSKAYA, Yudif' L'vovna

[Vitamin B_{12} and its significance in the pathogenesis and treatment of pernicious anemia] Vitamin B_{12} i ego znachenie v patogeneze i lechenii pernitsioznoi anemii. Moskva, Medgiz, 1960. 134 p. (MIRA 13:12)
(ANEMIA) (CYANOCOBALAMINE)

MILEVSKAYA, Yu.L., kand.med.nauk

Vitamins and the blood. Zdorov'e 8 no.8:4-5 Ag '62. (MIRA 15:8)
(VITAMINS) BLOOD)

RABUKHIN, A.Ye.; MILEVSKAYA, Yu.L.

Clinical aspects of cardiac lesions in tuberculosis. Terap.arkh. 34 no.2:13-20 '62. (MIRA 15:3)
(HEART—TUBERCULOSIS)

KASSIRSKIY, I.A.; MILEVSKAYA, Yu.L. (Moskva)

Controversial questions in antibiotic therapy. Terap. arkh. 35 no.2:9-16'63. (MIRA 16:10)
(ANTIBIOTICS)

VISHNEVETSKIY, V.; MILEVSKIY, B.

The 367M-type oil distributor. Avt. transp. 36 no.5:9-10 My '58.
(Service stations) (MIRA 11:6)

VISHNEVETSKIY, V.; MILEVSKIY, B., inzh.

Equipment for washing motor-vehicle parts. Avt. transp. 38 no. 12:28-29 D '60. (MIRA 13:12)
(Motor vehicles--Maintenance and repair)

MILEVSKIY, B.F.

Substitute for a diamond pin used in straightening grinding wheels. Obm.tekh.opyt.na avt.transp. no.4:74-76 '60. (MIRA 13:12)
(Grinding wheels)

DUNAYEVA, N.I.; MILEVSKIY, B.F.

People of a creative mind. Metallurg 10 no.8:3-4 Ag '65. (MIRA 18:8)

1. Nachal'nik Byuro po ratsionalizatsii i izobretatel'stvu Cherepovetskogo metallurgicheskogo zavoda (for Dunayeva). 2. Predsedatel' Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov (for Milevskiy).

MILEVSKIY D.

BULGARIA/Chemical Technology. Chemical Products and Their Application. Ceramics. Glass. Binders. Concrete. I-8

Abs Jour : Ref Zhur-Khimiya, No 2, 1958, 5341.

Author : Monev G., Videnova R., Milevskiy D.

Inst : Institute of Mining Geology.

Title : Quartzites of Lozenska Mountain as Kinas Raw Material.

Orig Pub : Godishnik Minno-geol. in-t, 1954-1955, (1956), 2, No 1, 169-178.

Abstract : A study of 3 varieties of crystalline quartzites from 3 deposits of Lozenska mountain (Bulgaria) --dark red, pink and light grey, containing (in % by weight): SiO_2 94.7-97. .8, Al_2O_3 1.94-1.15, Fe_2O_3 0.6-2.3, R_2O 0.22-0.84; volumetric weight

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Card : 2/3

BULGARIA/Chemical Technology. Chemical Products and Their Application. Ceramics. Glass. Binders. Concrete. I-

Abs Jour : Ref Zhur-Khimiya, No 2, 1958, 5341.

Abstract : The best specimens were found to be those made from a mixture of Lozenska and Troyansko quartizites (specific gravity 2.37, compression 201 kg/cm^2). According to the data listed the Dinas thus obtained meets the specifications of Grade II Gost USSR. As a result of the work the conclusion is arrived at that quartzites of Lozenska mountain, particularly in admixture with Troyansko quartzites, can be utilized to establish the manufacture of Dinas in Bulgaria, where it has not been produced hitherto.

Card : 3/3

1.8000

S/194/62/000/006/037/232
D295/D308

AUTHOR: Milevskiy, E.B.

TITLE: On the linearity of the readings in radiation measurements of parameters of machine elements in the process of their production

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 6, 1962, abstract 6-3-76 f (Nauchn. zap. L'vovsk. politekhn. in-t, no. 78, 1961, 210-225)

TEXT: In the control and measurement, by means of radioactive irradiation, of the linear dimensions of machine elements in the process of their production (in motion, oscillation etc.), error arise owing to the existence of non-linearity between the increments of the readings of detectors and the increments of the linear dimensions of machine elements. The regions of linear dependence are investigated by geometrical-optics methods when two radiators and two detectors are used for the measurement. It is found that improved linearity can be achieved in rational measuring by designing the source-detector scheme in accordance with notions of geometrical

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optics and by improving the geometry of source and detector, by decreasing the solving time of the counters and recording equipment, by using mono-crystals with small luminescence-decay time as detectors and by using a photo-electron multiplier with large multiplication coefficient and small load. 10 figures and 3 references. [Abstractor's note: Complete translation.]

S/263/62/000/010/004/013
I028/I250

AUTHOR: Milevskiy, E. B.

TITLE: Measurement errors in the radiation control of wall differences of an article in a differential circuit

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 32. Izmeritel'naya tekhnika, no. 10, 1962, 18, abstract 32.10.132. "Nauchn. zap. L'vovsk. politekhn. in-t", no. 79 1961, 269-280

TEXT: The increase in the statistical errors caused by the discrete character of nuclear radiation and the wall differences of the article are determined analytically, and a criterion for the applicability of the radiation method to the control and measurement of the wall differences of the article is established. Results of the investigation show that: 1) the differential measuring circuit decreases considerably the measurement error relative to the direct circuit; 2) in designing radiation instruments operating by the differential circuit it is necessary to take into account the increase of statistical errors caused by statistical fluctuations and the difference in the thickness of the wall, which increases the absolute error of the measurements; 3) the increase of statistical error's as a part of the measuring error, for given circuit sensitivity, wall difference, and linear absorption coefficient, can be reduced by using a high-activity source or by increasing the constant measuring time

Card 1/2

Measurement errors in..

S/263/62/000/010/004/013
I028/I228

A compensation measuring circuit is recommended in order to decrease the effect of the statistical and instrumental errors. There are 6 figures, and 11 references.

[Abstracter's note: Complete translation.]

Card 2/2

17.1450

39591
S/263/62/000/011/003/022
I007/I207

AUTHOR: Milevskiy, E. B.

TITLE: The effect of self absorption of radiations in a radiation source used for measurements

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 32. Izmeritel'naya tekhnika, no. 11, 1962, 14. abstract 32.11.84. "Dokl. Lvovsk. politekhn. in-ta", v. 5, no. 1. Mekhanika, 286–292

TEXT: The design of radioactive measurement devices of definite statistical error involves: determination of the optimum quantity of radiosotopes in order to select an optimum thickness of the radiation source for detection purposes; establishing the specific activity of the source, and protection of the staff from radiation hazards. A thin layer of metallic Tl^{204} isotope is used as a β-ray emitter, having a radiant energy of 0.76 Mev. With the increase in the layer thickness, the amount of γ-radiation in the β-spectrum increases as a result of complete absorption of β-particles by the radiation source, and the Tl^{204} gradually becomes an emitter of γ-radiations with an energy of 0.0076 to 0.76 Mev. With the change in the layer thickness of the Tl^{204} emitter, the activity of the latter, after a sudden increase, then diminishes, asymptotically approaching a constant value — the field of saturation. Thus, for instance, when the layer thickness increases from 0.5 to 1 mm, the radiation activity increases by 250%, whereas at an increase from 2 to 2.5 mm, the activity increases by 50%. The study of self-absorption of an infinite lamella shows that the density of the radiant flux on the source surface has a limiting value that depends on the specific activity and absorption coefficient of the source. In cases where

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β or γ-radiations are emitted by a source of large layer thickness, the degree of absorption depends on the energy of the β and γ-radiations. The larger the thickness of the β-source that fully absorbs electrons, the smaller the measuring sensitivity. The author devises formulae for computing such a layer thickness that ensures retention of β-radiations; he further describes the absorption of β-rays by sources of varying layer thickness. He shows that, when using a radiation source of infinite thickness, the counting speed is proportional to the ratio between the amount of radioactive material and the amount of inactive material whereas, in the case of a thin radioactive source, the counting speed is proportional to the amount of active material. There are 5 figures and 6 references

[Abstracter's note: Complete translation.]

S/263/62/000/011/004/022
I007/I207

AUTHOR: Milevskiy, E. B.

TITLE: Radioactive measurements of the diameter of large-size components

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk. 32. Izmeritel'naya tekhnika, no. 11, 1962, 14, abstract 32.11.86. "Dokl. L'vovsk. politekhn. in-ta", v. 5, no. 1, Mekhanika, 293–302

TEXT: Radioactive measurement of the diameter of large-size components may be carried out by determining either the gain in diameter or the absolute value of the latter. In the first case, the following scheme may be used: one radiation source (RS) and one radiation detector. According to the scheme a narrow beam of parallel radiations passing through a collimator mounted on the RS, is sent tangentially to the surface of the component (part of the beam is covered by the component) and, after passing through another collimator is received by a detector. The gain in diameter causes reduction or increase in the intensity of the radiation flux received by the detector; the intensity variations are recorded by an electronic computing device (system). However, vibrations of the component, particularly those of low frequency, increase the inertia of the measuring device, leading to reduction of its sensitivity accuracy, and speed of measurements. Large vibration amplitudes require a considerable increase in the beam width and hence particular attention to the geometrical shape of

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the RS. The scheme, two RS and two detectors, permits the measurement of the gain in diameter or its absolute value for components subjected to vibrations, movement, or displacement of the centerline. The axes of each RS-detector group are parallel over a distance equal to the rated diameter of the component; the groups are mounted asymmetrically with respect to the vertical diameter of the component, and from two wide, divergent radiation-beams oriented in opposite directions. Both detectors are connected to a pulse-counting device that gives summation of readings. The readings vary with the changes in the component sizes, and are approximated by nonlinear curves. Despite some deficiencies, the method of radioactive diameter-measurement for large-size parts permits the recording of changes in the diameter caused by deposition of vapor, dust and cooling liquid even for components subjected to vibrations.

[Abstracter's note: Complete translation.]

L 21675-65 EWT(1)/EWT(m) DIAAP

ACCESSION NR: AR5000980 8/0272/64/000/009/0032/0032

SOURCE: Ref. zh. Metrologiya i izmeritel'naya tekhnika. Otd. vyp., Abs. 9.32.209

AUTHOR: Milevskiy, E. B.

TITLE: Effect of some geometric parameters of a radiation setup on the measurement of a workpiece

CITED SOURCE: Sb. nauchn. rabot aspirantov L'vovsk. politekhn. in-ta., no. 2, 1963, 150-167

TOPIC TAGS: radiation measurement, geometric parameter, wall thickness measurement, hollow steel cylinder, diameter measurement, measurement sensitivity, measurement linearity, point source, extended source, source dimension, beam impedance screen, collimating slit, amplification factor

TRANSLATION: The article cites experimental data on the effects of geometric parameters in a radiation setup for measuring the diameter and wall thickness of hollow cylindrical pieces, as well as the effects of contour and dimensions of the collimator slit, on the sensitivity and linearity of the measurements. A

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L 21675-65

ACCESSION NR: AR5000280

laboratory setup for measuring the diameter and wall thickness of a steel cylinder is described and analyzed. The sensitivity and linearity of a counter's readings were found to vary during the experiments depending on: 1) distance between the source and the vertical axis of a cylinder; 2) distance between the source and detector; 3) width of collimating slit; 4) length and positioning of the source (wire, plate, capsule); 5) configuration of the collimator; 6) angle between the cylinder axis and the source-detector axis; 7) presence of artificial obstacles in the beam's path; 8) isotopes used in the experiment. The experimental results and their analysis served as the basis for the following conclusions: 1) the linearity and sensitivity of readings improve as the dimensions of the light source increase; 2) a reduction in the size of the collimating slit in the detector and the source improves the sensitivity of diameter measurement, but narrows the range of its linearity and lessens the sensitivity of measurements of wall thickness; 3) placement of profiled screens in the beam's path acts to increase substantially the linearity range in measurements of wall thickness and to decrease it in gaging diameters; the sensitivity increases in all cases; 4) the number of recorded pulses can be increased and the linearity and sensitivity of measurements improved by reducing the diameter or wall thickness dimension gain area in relation to the size of the light source; 5) a vertical placement of (extended) beta or gamma sources improves the sensitivity of diameter

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L 24575-65
ACCESSION NR: AR5000980

measurements as compared to a horizontal placement (point source), but substantially reduces it in measurements of wall thickness; the linearity of the readings deteriorates; 6) an increase in the distance from source to vertical axis of the cylinder and from source to detector expands the range of linearity of the readings, but reduces the area of sensitivity of the measurements; 7) the peak number of pulses occurs without defined ranges of the amplification factor and at high values of pulse length; 8) rotation of the measured piece in relation to the source-detector axis does not produce any significant changes in the readings of the instrument. Bibl. with 4 titles; 15 illustrations and 3 tables. M. Makler

SUB CODE: IE ENCL: 00

Card 3/3

MILEVSKIY, E.B.

Measurement errors in the differential network of a system using a radiation technique for controlling discrepancies in the manufacture of items. Nauch. zap. LPI no.1:269-280 '61. (MIRA 16:6)
(Radioactive substances--Industrial applications)
(Automatic control)

MILEVSKIY, Eduard Borisovich; MARKOVSKIY, Ye.A., kand. tekhn.nauk, retsenzent; RABINOVICH, A.N., prof., doktor tekhn.nauk, red.; CHISTYAKOVA, L.G., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Radiation check and measurement of workpieces] Radiatsionnyi kontrol' i izmerenie izdelii. Moskva, Mashgiz, 1963. 129 p. (MIRA 16:6)

(Radioisotopes--Industrial applications)
(Engineering inspection)

ACC NR: AR6034972 SOURCE CODE: UR/0272/66/000/008/0032/0032

AUTHOR: Milevskiy, E. B.

TITLE: Conditions for obtaining minimal noise in an electronic circuit which measures dimensions by means of radiation

SOURCE: Ref. zh. Metrologiya i izmeritel'naya tekhnika, Abs. 8.32.255

REF SOURCE: Kontrol'no-izmerit. tekhnika. Resp. mezhved. nauchno-tekhn. sb., vyp. 1, 1965, 116-122

TOPIC TAGS: measurement, electronic circuit, radioisotope, signal to noise ratio, electric measuring instrument

ABSTRACT: Conditions for obtaining minimal noise in an electronic circuit which measures dimensions by means of radioisotope radiation are studied. The dependence of noise pulses on the amplification factor, the discrimination threshold and the photomultiplier voltage as well as the ratio between operating and noise pulses are investigated. Six illustrations. [Translation of abstract] [DW]

SUB CODE: 09, 14/

Card 1/1 UDC: 621.391.82:531.717

L 04684-67 EWT(d)/EWT(m)/EWP(v)/EWP(k)/EWP(t)/EWP(z)

ACC NR: AR6020941 SOURCE CODE: UR/0137/66/000/002/D033/D033

41
B

AUTHOR: Milevskiy, E. B.

TITLE: A survey of radiation devices for the automatic control of dimensions 14

SOURCE: Ref. zh. Metallurg, Abs. 2D228

REF SOURCE: Avtomatiz. proizv. protsessov v mashinostr. i priborostr. Mezhved. resp. nauchno-tekhn. sb., vyp. 2, 1965, 113-131

TOPIC TAGS: radiation instrument, beta radiation, gamma radiation

TRANSLATION: A survey based on Soviet and foreign literature is made of various radiation devices for automatic dimension control used in the rolling industry. The following questions are considered in detail: 1) controlling of sheet and plate thickness by means of radiation absorption (beta-thickness gages, gamma-alpha-thickness gages); 2) controlling of material and coating thickness by an x-ray method; 3) controlling of layer and article thickness by measuring back-scattered radiation. Schematics of and operating principles of these devices are presented in detail. N. Yudina.

SUB CODE: 18,13

UDC: 621.771.24.004.5

fv

Card 1/1

L 34787-66 EWT(m)

ACC NR: AR6017217 SOURCE CODE: UR/0058/65/000/012/A063/A06

AUTHOR: Milevskiy, E. B.

TITLE: Procedure for designing the input unit of a radiation measuring circuit

SOURCE: Ref. zh. Fizika, Abs. 12A535

REF SOURCE: Vestn. L'vovsk. politekhn. in-ta, no. 4, 1965, 105-115

TOPIC TAGS: radiation measurement, radiation detector, isotope, radiation source, Beta radiation, Gamma radiation

ABSTRACT: The design of the input unit of a radiation measuring circuit consists o selecting the type of nuclear radiation and radioactive isotope, selecting the ele- ments of the recording device, and the corresponding calculations. When the isotop serves as the source of energy for the sensitive element of the circuit input unit, the calculation includes also the determination of the activity and the amount by weight. It is noted that radioactive isotopes of all the elements of the periodic system have been obtained by now. In this connection, it is especially important for the construction of radiation devices to be able to estimate all the available radioactive isotopes from all points of view, and to choose correctly the necessar radiation source. When choosing the radioactive isotope it is necessary to take i account its following characteristics: type and energy of radiation, half life, specific activity, isotope composition, thickness of half-value layer for β partic and the γ constant for γ radiation, cost of radioactive compound, and complexity a

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L 34787-66

ACC NR: AR6017217

metal content of the shielding equipment. The type of nuclear radiation determines in many ways the choice of the converter (detector) of radio-isotope radiation into electric pulses. Most frequently the detectors and converters are gas-discharge and scintillation counters. Certain phosphors most frequently used in scintillation detectors are considered. L. S. [Translation of abstract]

SUB CODE: 20

Card 2/2

MILEVSKIY, I.K., mashinist bul'dozera

All our energy for our favorite work. Trans. stroi. 13 no.8:48 Ag '63. (MIRA 17:2)

24.7100

76007
SOV/70-4-5-29/36

AUTHOR: Milevskiy, L. S.

TITLE: Interaction of Dislocations in Silicon as Observed After Staining

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 5, pp 785-786 (USSR)

ABSTRACT: The theoretical concepts suggested by W. T. Read and A. Cottrell on intersecting slip planes, their tangling up, interference, orientation, bending, the resulting lattic vacancies, kinks, and the open loops of dislocations are cited. Friction at intersecting slip planes that lead to beinding of a moving dislocation and to a semiloop of dislocation is confirmed by the author in artificial grown silicon crystals. Having stained the slip planes by copper deposited in lattice vacancies along the surfaces of four different dislocations, he took photograp of the colored bands by an infrared microscope. The photographs showed bent slip surfaces near the intersections, and extensive straight planes beginning at a

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certain distance from the intersections. The copper deposition was not continuous along the straight planes but was confined to the parts representing screw dislocations with concentrated vanancies at small steps. At the intersection of four or more synchronic slip surfaces, the deposited copper formed a dense and manifold branched cloud. This kind of tangled dislocations seems to produce more spots of condensed vacancies Thus, staining permits one to visualize the dislocations and to get information concerning their interactions and forms. V. L. Indenbom is acknowledged for reviewing the article and for discussions. There are 3 figures; and 3 references, 2 U.S., 1 U.K. They are: W. T. Read, Dislocations in Crystals, 1953; W. C. Dash, J. Appl. Phys., 27, 10, 1193, 1956; A H. Cottrell, Dislocations and Plastic Flow in Crystals, 1953.

ASSOCIATION: Metallurgical Institute imeni A. A. Baykov (Institut metallurgii imeni A. A. Baykova)

SUBMITTED: April 21, 1959

84071
S/181/60/002/009/012/036
B004/B056

9.4300 (1035, 1138, 1143)

AUTHORS: Akimchenko, I. P., Milevskiy, L. S.

TITLE: The Diffusion of Antimony in Germanium Alloyed With Aluminum

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 9, pp. 2109 - 2116

TEXT: The authors discuss the results obtained by some papers published on the diffusion of impurities in germanium (Refs. 1-5). B. I. Boltaks (Ref. 5) determined the "Diffusion Isothermal Lines" for the diffusion of antimony in germanium alloyed with antimony. The present paper aimed at determining the diffusion isothermal lines for antimony, in which case, however, the Ge was alloyed with an acceptor, viz., aluminum. p-type Ge crystals produced by M. Ya. Dashevskiy and having an aluminum content of $N_a = 2.4 \cdot 10^{14}$, 2.10^{16}, 4.10^{17}, and 3.10^{18} atom/cm^{-1} were used. The Hall effect and resistivity were measured in these samples, and the type of conductivity was determined, the concentration p of the carrier being put equal to N_a. The samples were polished by means of M20 (M20)

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and M10 (M10) SiC powder, purified, and annealed together with a 1% Ge-Sb alloy in quartz ampoules evacuated to 10^{-3} torr. Annealing temperatures were between 650 and 930°C, and annealing lasted from 2 to 5 days, so that deep penetration of Sb 50 - 300 μ was made possible. In consequence of the diffusion of Sb, a p-n junction occurred at the place where Sb concentration became equal to that of Al, from the position of which the diffusion coefficient D was calculated: $D = x^2/A4t$ cm^2/sec (4) (x = depth of the p-n junction, t = duration of the annealing, A = a constant which was determined for each alloy and temperature). x was determined a) by polishing one side of the sample at angles of 2, 4, or 6°, checked by means of a МИМ-6 (MIM-6) microscope, and by recording the current-voltage characteristic; b) by polishing plane-parallel layers, recording the current-voltage characteristic, and measuring the thermo-emf; c) measuring the resistivity by means of a probe according to Refs. 6,7. The values for x obtained by this method are given in a table. Samples annealed under the same conditions but without the Sb-Ge alloy proved that the thickness of the layer from which Al evaporated, was less by one order of magnitude than x. The results obtained for the four

The Diffusion of Antimony in Germanium Alloyed With Aluminum

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Ge samples with different Al contents are represented in Figs. 1-4 as $\log D = f(1/T)$. The following was found: $D = D_o \exp(-\Delta E/RT)$. In Fig. 5, $\log D_o = f(\log N_a)$, and in Fig. 6, $\Delta E = f(\log N_a)$ is represented. Fig. 7 shows the diffusion isothermal lines $\log D = f(\log p)$ for 748°, 800°, 840°, and 883°C. At lower temperatures, N_a exerts no influence upon D up to about 10^{17} cm^{-3}; at 10^{18} cm^{-3}, D quickly becomes smaller. At higher temperatures, D has a maximum at $N_a \sim 10^{17}$ cm^{-3}, which is followed by a drop at $N_a \sim 10^{18}$ cm^{-3}. The increase of D between $N_a = 10^{14}$ and $N_a = 10^{17}$ cm^{-3} is explained by an internal electric field which forms as a consequence of the high concentration gradient of the impurity diffused in: $E_i = (kT/e)(1/C_{Sb})(\partial C_{Sb}/\partial x)$ (8). C_{Sb} is the concentration of antimony and a function of x. At higher temperatures, D is decreased because of intrinsic conductance. There are 7 figures, 1 table, and 10 references: 3 Soviet, 5 US, 1 British, and 1 Czechoslovakian.

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84071

The Diffusion of Antimony in Germanium Alloyed with Aluminum

S/181/60/002/009/012/036
B004/B056

ASSOCIATION: Institut metallurgii im. A. A. Baykova AN SSSR, Moskva (Institute of Metallurgy imeni A. A. Baykov of the AS USSR, Moscow)

SUBMITTED: April 29, 1959 (initially)
March 5, 1960 (after revision)

Card 4/4

84077
S/181/60/002/009/018/036
B004/B056

9.4300

AUTHOR: Milevskiy, L. S.

TITLE: The Problem of the Influence of Hardening on the Lifetime of Minority Carriers in Silicon

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 9, pp. 2158 - 2160

TEXT: By creating an impurity atmosphere at the dislocations in silicon the author endeavored to increase the energy necessary for their transfer and thus to prolong the lifetime τ of the minority carriers. Before hardening, copper of a dilute $CuSO_4$ solution, to which some HF had been added, was applied onto samples of n-type silicon having a resistivity of 12-20 ohm.cm and τ = 120 - 500 μsec. Before hardening, the samples were heated to 700-800°C in a hydrogen atmosphere. The copper deposited on the dislocations, and τ either remained constant or increased somewhat (Fig. 1). The region in which an intense decrease of τ occurs was shifted toward higher temperatures. The dislocations then separated from the impurity atmosphere, and τ quickly became smaller. Fig. 2 shows a

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cross section through a sample. When the hardening of the sample coated with Cu was stopped at 500°C with a remaining τ = 60 - 100 μsec, and by observing the relaxation of τ (Fig. 3), a continuous decrease of τ, i.e., an increase of the concentration of the recombination centers due to dissolution of the cloud of the impurity atmosphere was found. Hardening of the sample at 250 - 350°C led only to a slight increase of τ. The impurity concentrates around the dislocation. There are 3 figures and 7 references: 2 Soviet and 5 US.

ASSOCIATION: Institut metallurgii im. A. A. Baykova AN SSSR, Moskva (Institute of Metallurgy imeni A. A. Baykov of the AS USSR, Moscow)

SUBMITTED: July 27, 1959

84086
S/181/60/002/009/027/036
B004/B056

9.4300 (1035, 1138, 1143)

AUTHOR: Milevskiy, L. S.

TITLE: The Mechanism of the Introduction of Recombination Centers in Germanium and Silicon in Low-temperature Hardening

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 9, pp. 2218-2227

TEXT: It was the aim of this investigation to solve the problem as to whether the lifetime τ of the minority carriers in Ge and Si is increased if heating before hardening is more and more shortened, i.e., whether there exists a mechanism for the introduction of recombination centers that does not depend on the change in the solubility of impurities. The samples were heated and hardened in helium in a resistance furnace regulated by an ЭПД-12 (EPD-12) potentiometer. Hardening was carried out in cold oil. The impurity atmosphere on the dislocations was produced by annealing the sample in hydrogen after applying copper onto it or after wetting it with $Cu(NO_3)_2$ ("decorating"). τ was determined from photoconductivity. The forming of recombination centers was investigated within

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The Mechanism of the Introduction of Recombination Centers in Germanium and Silicon in Low-temperature Hardening

the range of 250 - 600°C. Already at 350°C hardening leads to a displacement of the dislocations (microphotograph Fig. 1), in which case there is no dependence on the duration of heating (Fig. 2). Fig. 3 shows the effect of hardening upon τ in the original silicon and in that treated with Cu. In the latter, the shortening of τ began only at temperatures that were higher by 100° to 150°C. It follows from Fig. 4 that silicon hardened at 450 - 500°C is not stable. In it, τ decreases also at room temperature. The data obtained are discussed in detail, reference being made to other papers. The following conclusions were drawn: 1. In low-temperature hardening, a mechanism of the introduction of recombination centers, which is not influenced by diffusion from the sample surface, is active. It is based upon the motion of dislocations due to thermal stresses, in which case the dislocations break away from their impurity atmosphere. The most important effect produced by the interaction between impurities and dislocations is the precipitation of the impurities, by which they lose their electric activity and diminish the recombination effect of the dislocations. The precipitation of impurities causes also stabilization of the dislocations and of τ. This stabilization is attained by means of Cu and

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The Mechanism of the Introduction of Recombination Centers in Germanium and Silicon in Low-temperature Hardening

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Si by hardening at 100 - 150°C, but not higher than 450 - 475°C. The activation energy of the introduction of thermal recombination centers depends on the concentration of the impurities on the dislocations, and is variable within a wide range. By "decorating" the dislocations with impurities, the diffusion coefficient of such impurities may be studied as are able to precipitate on dislocations at temperatures near room temperature. There are 4 figures and 21 references: 13 Soviet and 9 US.

ASSOCIATION: Institut metallurgii im. A. A. Baykova AN SSSR, Moskva (Institute of Metallurgy imeni A. A. Baykov of the AS USSR, Moscow)

SUBMITTED: December 21, 1959

X

Card 3/3

MILEVSKIY, L. S., Cand. Phys-Math. Sci. (diss) "Formation of Defects of Structure in Rearing of Monocrystals of Silicon and Their Effect on Electrophysical Properties of the Material." Moscow, 1961, 20 pp (Acad. of Sci. USSR, Physics Institute im P. N. Lebedev) 120 copies (KL Supp 12-61, 252).

MILEVSKIY, L.S.

Pulsations in the rate of growth of a crystal and their effect on the structure and properties of a material produced by Czochralsky's method. Kristallografiia 6 no.2:249-255 Mr-Ap '61. (MIRA 14:9)

1. Institut metallurgii im. A.A.Baykova.
(Silicon crystals--Growth)

S/020/61/141/006/013/021
B104/B112

AUTHORS: Indenbom, V. L., Nikitenko, V. I., and Mileyskiy, L. S.

TITLE: Observation of internal stresses around dislocations in silicon

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 6, 1961, 1360 - 1362

TEXT: The observation of decorated and nondecorated dislocations in silicon by an electron-optical transducer is described. The experimental arrangement consisted of a usual polarization microscope (with Nicol prisms) and a БЭИ-3 (BEI-3) electron-optical transducer. An ОИ-24 (OI-24) lamp with infrafilter was used as light source. Dislocations were oriented strictly parallel to the direction of observation by a special breeding method. Crystal breeding was carried out in direction [110]. 2 - 3 mm thick plates were cut out at right angles to the breeding axis, and polished. As was shown by experiments with polarized light, there exists a birefringence field of rosette-shaped character in the vicinity of dislocations.

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Observation of internal stresses...

This agrees with results of a previous paper by V. L. Indenbom et al. (Kristallographiya, 2, 190 (1957)) according to which the birefringence field around dislocations (when the crystal is considered to be isotropic) can be described by the formula $r = C\cos\Theta\cos 2(\Theta - \alpha)$. Θ is the azimuth counted from the slip plane, α is the angle between this plane and the polarization plane, C is a constant proportional to the marginal component of the Burgers vector of dislocation, to the hardness of the crystal, and to the photoelastics constant. The pattern of microstresses around dislocations changes completely after decorating. The rosette changes, and the signs of birefringence in the individual rosette fields which differed before decorating become equal. Microstresses around decorated dislocations are radially compressed and tangentially elongated. In usual decorating, intensity of the microstresses around dislocations increases somewhat, original microstresses disappear, and curvilinear dislocations may be observed besides rectilinear ones. Only macrostresses produced by the effect of many dislocations are conserved. Redistribution of stresses around dislocations decreases with decreasing impurities. The authors thank Professor M. V. Klassen-Neklyudova for interest and V. D. Khvostikova

for assistance in crystal breeding. There are 3 figures and 9 references: 5 Soviet and 4 non-Soviet. The three most recent references to English-language publications read as follows: W. L. Bond, J. Andrus, Phys. Rev., 101, 1211 (1956); R. Bullough, Phys. Rev., 110, 620 (1958); W. C. Dash, J. Appl. Phys., 29, 705 (1958).

ASSOCIATION: Institut kristallografii Akademii nauk SSSR (Institute of Crystallography of the Academy of Sciences USSR)
Institut metallurgii im. A. A. Baykova Akademii nauk SSSR (Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences USSR)

PRESENTED: June 5, 1961, by A. V. Shubnikov, Academician

SUBMITTED: May 30, 1961

33361
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B104/B112

24,7500 (1144, 1160, 1482)

AUTHORS: Indenbom, V. L., Nikitenko, V. I., and Milevskiy, L. S.

TITLE: Polarization-optical analysis of the dislocation structure of a crystal

PERIODICAL: Fizika tverdogo tela, v. 4, no. 1, 1962, 231 - 235

TEXT: The polarization-optical method makes it possible to establish all the characteristics of the dislocation structure in crystals of low dislocation density. A plate with a perpendicular [001] axis, cut out of a Si single crystal parallel to the (110) plane, was used for determining the Burgers vector and for investigating various types of dislocation, such as sessile dislocations (Fig. 2) and dislocations with glide planes coinciding with the $(1\bar{1}1)$ and $(\bar{1}11)$ planes (60° dislocations). The formation of sessile dislocations from the 60° dislocations is described by $\frac{a}{2}[101] + \frac{a}{2}[0\bar{1}\bar{1}] \rightarrow \frac{a}{2}[1\bar{1}0]$, according to which one 60° dislocation glides along the $(\bar{1}11)$ plane and hits the other 60° dislocation gliding along the $(1\bar{1}1)$ plane. The Burgers vectors of the 60° dislocations form

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an angle of 120°. The planes of easiest gliding of dislocations form a tetrahedron in a diamond-type lattice. The Burgers vector of the dislocation resulting from the above reaction is perpendicular to the edge of the tetrahedron which is parallel to the dislocation. The atomic mechanism underlying the above reaction is discussed in detail. It is shown that neither the direction of the Burgers vector nor the gliding planes of dislocations formed according to this mechanism coincide with the planes of easiest gliding. V. D. Khvostikov is thanked for having grown the crystal, and Professor M. V. Klassen-Neklyudova for her continuous interest. There are 5 figures and 5 references: 3 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: G. Echart, S. Lederhandler, Bul. Am. Phys. Soc., ser. II, 5, 1, 25, 1960; J. Hornstra, J. Phys. Chem. Sol., 5, 1-2, 129, 1958.

ASSOCIATION: Institut kristallografii AN SSSR Moskva (Institute of Crystallography, AS USSR, Moscow)

SUBMITTED: August 9, 1961

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B101/B102

AUTHOR: Milevskiy, L. S.

TITLE: Study of the carrier lifetime at various stages of saturation of impurity atmospheres of dislocations with copper atoms

PERIODICAL: Fizika tverdogo tela, v. 4, no. 2, 1962, 429 - 433

TEXT: In order to evaluate the role of the impurity atmosphere, the temperature dependence of the lifetime τ of carriers in n- and p-type Si has been studied. The initial dislocation density was 10^3 - 10^4 per cm^2. The data for the initial Si were compared with those for Si with an impurity atmosphere saturated with Cu atoms, as well as with data obtained after the disturbance of equilibrium at the dislocations by a heat shock (heat treatment at 500°C and quenching with ethylene glycol). The resistivity of the n-type Si was 15 - 25 ohm·cm, and that of the p-type Si was 95 - 100 ohm·cm. The initial lifetime was 75 - 200 sec. τ was determined from the quenching of the photoconductivity at 10^{-3} mm Hg. The methods of dislocation screening with Cu atoms and the heat shock technique were previously published (FTT, 2, 9, 2218, 1961). Measurement of the Hall effect has

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shown that the diffusion of Cu in the range of 77 - 550°K changes neither the concentration nor the mobility of the carriers. The temperature dependence of τ, however, changed after the diffusion of Cu and after the heat shock (Figs. 1 and 2). Dislocation screening reduces their effect on recombination which is determined by impurity centers of unknown origin, which are dissolved in the bulk. Quenching does not alter the Cu concentration, but changes the position of atoms that might affect the recombination process. The impurity atoms become efficient recombination centers if they are located in the region of maximum deformation of the energy band. The adhesion of holes observable in n-type Si with Pd contacts at low temperatures (<250°K) did not occur when using Zn contacts. The function $\ln \tau = f(10^3/T)$ exhibited two "plateaux" after the adhesion had been removed. After quenching, the high-temperature plateau vanished, and the curve adopted the same course as in the case of the initial specimen. There are 4 figures and 5 references: 5 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: C. B. Collins, R. O. Carlson. Phys. Rev., 108, 6, 1409, 1957.

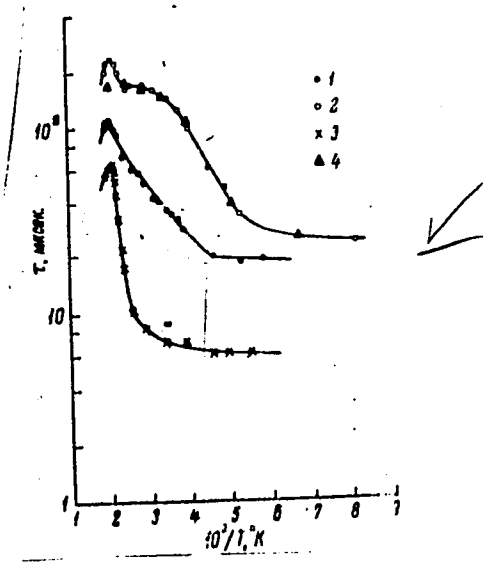
ASSOCIATION: Institut metallurgii im. A. A. Baykova AN SSSR, Moskva
(Institute of Metallurgy imeni A. A. Baykov, AS USSR, Moscow)

Study of the carrier lifetime...

SUBMITTED: September 4, 1961

Fig. 1. τ as a function of 1/T for p-type Si.

Legend: (1) initial specimen; (2) after diffusion of Cu at 750°C; (3) after thermal shock (valid both for the initial specimen and after diffusion of Cu); (4) theoretical points for recombination at multiply charged centers ($\varepsilon_0 \approx 0.16$ ev); τ, μsec.



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24,7700

36189
S/181/62/004/003/045/045
B101/B102

AUTHOR: Milevskiy, L. S.

TITLE: Effect of heat treatment on the lifetime of the carriers in copper-doped silicon

PERIODICAL: Fizika tverdogo tela, v. 4, no. 3, 1962, 825 - 827

TEXT: Some new data are given on the effect of impurity atmospheres on the carrier lifetime. Specimens of n-type Si, resistivity 10 - 20 ohm·cm, surface dislocation density 10^3 - 10^4 cm^{-2} were wetted with a solution of $Cu(NO_3)_2$ and annealed in an H_2 atmosphere. The change in lifetime τ was measured ($\tau_{init.}$ = 70 - 150 μsec). A maximum increase of τ (up to about 300 μsec) was observed after annealing at 750°C which set in already within the first 20 - 30 min. Thus, the diffusion process of Cu was terminated within this period. The slowly cooled specimens had the same τ. This stable state is, however, disturbed on heating to ~500°C and quenching in ethylene glycol. τ was then found to depend considerably on time. While τ was reduced only slightly by quenching

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a considerable reduction was observed in the course of aging at 30 - 50°C (to about 35 - 45 μsec after 6 hrs). Conclusions: (1) the diffusion of Cu prolongs τ owing to the formation of a screening impurity atmosphere around the dislocations; (2) subsequent quenching causes a displacement of some dislocations. This could be proved by etching. After the quenching new etching pits were found. The quenched specimen contained not only dislocations screened off by an impurity atmosphere but also dislocations that had left the impurity atmosphere as a result of thermal stresses. (3) These dislocations participate in recombination only slightly. Hence the effect of the dislocations on recombination is a complex function of the number of impurity atoms forming the impurity atmosphere. (4) Recombination effectiveness of the dislocations increases on aging if a chain of recombination centers, e. g., of copper atoms is formed along the dislocation center. There are 2 figures and 10 [illegible] references: 3 Soviet and 7 non-Soviet. The four most references to English-language publications read as follows: A. D. Kurtz, S. A. Kulin, B. L. Aberbach, Phys. Rev. 101, 1285, 1956; A. D. Kurtz, S. A. Kulin, B. L. Aberbach, J. Appl. Phys., 27, 1287, 1956; W. Dash, J. Appl. Phys., 27, 1193, 1956; D. T. Stevenson, R. J. Keyes, J. Appl. Phys., 26, 190, 1959.

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Effect of heat treatment... S/181/62/004/003/045/045
B101/B102

ASSOCIATION: Institut metallurgii im. A. A. Baykova AN SSSR, Moskva (Institute of Metallurgy imeni A. A. Baykov of the AS USSR, Moscow)

SUBMITTED: January 2, 1962

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S/181/62/004/007/019/037
B102/B104

AUTHOR: Milevskiy, L. S.

TITLE: Interaction of the edge dislocations with the vacancies in silicon

PERIODICAL: Fizika tverdogo tela, v. 4, no. 7, 1962, 1878-1881

TEXT: An optical polarization method, as described in FTT, 4, 1, 1962, was used together with selective etching to study the interaction of positive (i) and negative (T) dislocations with point defects in Si single crystal plates (3 mm thick, cut parallel to the main axis). The (100)-dislocations shown in Fig. 1 are weakly mobile edge-type dislocations, the [111]-dislocations are of the usual sliding (60°) type; both have the same Burgers vector of $\vec{b} = \frac{a}{2}[110]$, where a is the lattice constant. The dislocation pair shown in Fig. 1 is of the type as described by Reed in his work on Dislocations in crystals (1957) and are in equilibrium at a temperature near the Si melting point. The diffusion of the dislocation is caused by an absorption of surplus vacancies. Dislocations of a certain

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